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| 09/930,194      | 08/16/2001  | Hideki Yamamoto      | 107314-00025        | 9215             |

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| EXAMINER |
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SHENG, TOM V

|          |              |
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| ART UNIT | PAPER NUMBER |
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2673

DATE MAILED: 12/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/930,194

Applicant(s)

YAMAMOTO, HIDEKI

Examiner

Tom V Sheng

Art Unit

2673

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

2. Claims 1, 5, 9 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

One of ordinary skill in the art would fail to ascertain the scope of the claims since the input-output characteristics of both the analog/digital gamma correction circuit and the gamma correction circuit (for changing gamma correction characteristics) are not described. Moreover, the claims are idiomatic and appear to be a literal translation.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 9, 11, 13, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Kaburagi et al. (US 6,160,532).

As for claims 9 and 13, Kaburagi teaches a display device (data processing and liquid crystal display drive circuit for driving a liquid crystal display panel; figure 1)

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comprising a digital gamma correction circuit (secondary gamma correction circuit 32), wherein

a gamma correction circuit (primary gamma correction circuit 24), for changing gamma correction characteristics whose input-output characteristics are variable (characteristics is variable throughout the output range and is non-linear; see figure 2, column 11, lines 10-33), is provided in a stage preceding the digital gamma correction circuit (primary gcc 24 precedes secondary gcc 32 as shown in figure 1), and the input-output characteristics of the gamma correction circuit for changing gamma correction characteristics are changed so that gamma correction characteristics are changed (the primary gcc 24 is implemented in a RAM and the RAM data can further be rewritten by the user, other than just in the factory; column 11, lines 42-52).

As for claims 11 and 15, Kaburagi's primary gamma correction circuit is a digital gamma correction circuit.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 3, 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaburagi as applied to claims 9 and 13 above, and further in view of Admitted Art.

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Claims 1 and 5 are also display device claims similar to claims 9 and 13, except that the succeeding gamma correction circuit is an analog gamma correction circuit instead of a digital gamma correction circuit.

Admitted Art (figures 1 and 7) teaches the conventional liquid crystal projector, which can comprise either an analog gamma correction circuit or a digital gamma correction circuit. One of ordinary skill in the art would know that there is no patentable distinction between the two implementations, as both are commonly used.

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to use an analog secondary gamma correction circuit, as a matter of engineering or cost preference.

As for claims 3 and 7, Kaburagi's primary gamma correction circuit is a digital gamma correction circuit.

7. Claims 2, 4, 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaburagi and Admitted Art as applied to claims 1 and 5 above, and further in view of Takayama (US 6,317,157 B1).

As for claims 2 and 6, Kaburagi teaches, as analyzed in claims 1 and 5, that the output is variable and non-linear with respect to the input, and the input-output characteristics is implemented with a RAM. Further, the user can rewrite the RAM data.

Kaburagi or Admitted Art does not teach that the input-output characteristics are indicated by an exponential equation whose exponent is variable.

Takayama also teaches two stages gamma corrections similar to Kaburagi. In the background of the invention, Takayama specifically teaches gamma correction or inverse gamma correction in the form of an exponential equation (with  $\gamma$  or  $1/\gamma$  as the exponent; see column 2, line 46 to column 3, line 39).

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to implement the input-output characteristics of the first gamma correction circuit of modified Kaburagi as an exponential equation as taught by Takayama, and with the changeable feature of the RAM thus effectively making the exponent ( $\gamma$ ) variable, because the primary gamma correction characteristics (figure 2) of Kaburagi lends itself suitably to this method.

As for claims 4 and 8, Kaburagi's primary gamma correction circuit is a digital gamma correction circuit.

8. Claims 10, 12, 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaburagi and Admitted Art as applied to claims 1 and 5 above, and further in view of Takayama (US 6,317,157 B1).

As for claims 10 and 14, Kaburagi teaches, as analyzed in claims 9 and 13, that the output is variable and non-linear with respect to the input, and the input-output characteristics is implemented with a RAM. Further, the user can rewrite the RAM data.

Kaburagi does not teach that the input-output characteristics are indicated by an exponential equation whose exponent is variable.

Takayama also teaches two stages gamma corrections similar to Kaburagi. In the background of the invention, Takayama specifically teaches gamma correction or inverse gamma correction in the form of an exponential equation (with  $\gamma$  or  $1/\gamma$  as the exponent; see column 2, line 46 to column 3, line 39).

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to implement the input-output characteristics of the first gamma correction circuit of Kaburagi as an exponential equation as taught by Takayama, and with the changeable feature of the RAM thus effectively making the exponent ( $\gamma$ ) variable, because the primary gamma correction characteristics (figure 2) of Kaburagi lends itself suitably to this method.

As for claims 12 and 16, Kaburagi's primary gamma correction circuit is a digital gamma correction circuit.

### ***Response to Arguments***

9. Applicant's arguments, see pages 4-5 of amendment, filed on 10/2/2003, with respect to the rejection(s) of claim(s) 1-16 under 35 U.S.C. 102(e) and 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Kaburagi, Admitted Art and Takayama.

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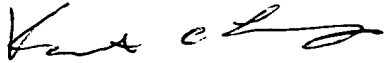
***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom V Sheng whose telephone number is (703) 305-6708. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (703) 305-4938. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Tom Sheng  
December 13, 2003

  
KENT CHANG  
PRIMARY EXAMINER